

	Department of Statistics Main Office 214 OSB Phone 850-644-3218	<b>INTRODUCTION TO APPLIED STATISTICS</b> STA 2122 Sections 0001-0013 FALL 2022, 3 credit hours FACE-TO-FACE FORMAT Course website: <a href="https://canvas.fsu.edu">https://canvas.fsu.edu</a>
	FSU Police Non-emergency 850-644-1234 <b>Emergency 911</b>	

<p><b>Instructor:</b> Ms. Radha Bose  <b>Email:</b> <a href="mailto:rbose@fsu.edu">rbose@fsu.edu</a>  <b>Office Hours:</b>          TUE 3:05-4:20pm on Zoom,  <a href="https://fsu.zoom.us/j/94368224950">https://fsu.zoom.us/j/94368224950</a>.          THU 11:35-12:50pm in 325 OSB</p> <p><b>Teaching Assistant (TA) names, email addresses, office hours and assigned sections are in the Syllabus module on the course Canvas. TA office hours will begin in the second week of classes.</b></p> <p>Please be aware that all Teaching Assistants who have been assigned to work with the instructor of this class will have access to your grades and academic accommodations information.</p> <p>We will not use Honorlock or any other online proctoring system.</p> <p>Canvas Support          Email: <a href="mailto:canvas@fsu.edu">canvas@fsu.edu</a> , Phone: 850-644-8004          Website: <a href="https://support.canvas.fsu.edu/home/">https://support.canvas.fsu.edu/home/</a>          Hours: 8am-5pm, Mon-Fri</p>	<p>Class meeting dates: 8/22 – 12/2          Lectures: MonWed 12:00-12:50pm          HCB101          Friday recitation sections: listed on a later page.          Final Exam: Tue Dec 6th, 3:00-5:00pm</p> <p><b>Classes will not be recorded for future viewing.</b></p> <p>Students will need to follow the University's current health and safety guidelines when they attend class.</p> <p>If no students show up within the first 15 minutes, or if there is a 15-minute stretch of time when no students show up after the last student has left, then the rest of the period will be cancelled. The next lesson will begin where the cancelled period would have left off, and the next assessment will include the material that would have been taught in the cancelled period.</p>
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### Course Description

**Prerequisites:** A grade of "C-" or better in MAC 1105 College Algebra (or equivalent).

**Special Note:** Subsequent credit for STA 5126 is not permitted. No credit given for STA 2122 if a grade of "C-" or better is earned in STA 2171, STA 3032 or QMB 3200.

This course covers Normal distributions, sampling variation, confidence intervals, hypothesis testing, one-way and two-way analysis of variance, correlation, simple and multiple regression, contingency tables and chi-square tests, non-parametric statistics.

The purpose of this course is to prepare students for further study and job preparation in the field of Natural Sciences. It will emphasize understanding of data and interpretation of statistical analyses. It will require students to think of data, and report the results of their analyses, in context.

**Learning Objectives**

This course has been approved to meet FSU's Liberal Studies **Quantitative and Logical Thinking** requirements and helps you become a critical analyst of quantitative and logical claims. In order to fulfill the State of Florida's College mathematics and computation requirement the student must earn a "C-" or better in the course.

By the end of the course, students will demonstrate the ability to:

1. Select and apply appropriate methods (i.e., mathematical, statistical, logical, and/or computational models or principles) to solve real-world problems.
2. Use a variety of forms to represent problems and their solutions.

The above two competencies will be assessed in the Liberal Studies Quantitative Assessment for STA 2122, which includes a written summary of results.

3. Use descriptive statistics and graphical methods to summarize data accurately.
4. Use inferential statistics to make valid judgments based on the data available.
5. Select the appropriate statistical tools to analyze a particular problem.
6. Describe the goals of various statistical methodologies conceptually.
7. Develop a healthy skepticism toward statistical studies and their results based on a sensible consideration of the techniques employed.

**Required Materials**

- A personal computer, reliable internet connection, and Chrome or Firefox browser.
- A TI-84 Plus or equivalent calculator. We will teach you how to use a TI-84 series calculator, but we cannot promise to be able to help with any other type of calculator.
- The ability to take handwritten notes, either on a tablet or on paper copies of the course notes which you will print out and bring to class.

A textbook is not required for this class. The instructor will provide all required course notes and exercises. Please note that the materials provided by the instructor were put together for your individual use only. While you may share these materials with classmates, we ask that you do not share them with third parties who are not enrolled in this class. If you seek help outside of class, you may, of course, allow your helper to see the materials, but please do not allow them to make copies or in any other way take our material. We appreciate your co-operation in protecting our material. Thank you!

**Additional Resource**

The following free online textbook is an additional resource that you might find useful: Introductory Statistics from OpenStax, Print ISBN 1938168208, Digital ISBN 1947172050, [www.openstax.org/details/introductory-statistics](http://www.openstax.org/details/introductory-statistics).

**Note on Technology-dependent Assessments**

This course is technology-dependent. While we will do our best to work with you on technology issues, please be aware that if you take an assessment electronically but we can find absolutely no record of the fact, then we will not be able to give you credit for it. Please do not use Safari when you take assessments on Canvas, please use Chrome or Firefox.

**Assessments & Grades**

<p><b>Participation:</b>          Consists of attending the Friday recitations, staying for the entire period, and participating in the recitation activities and discussions. <b>Attendance will be taken twice during the period.</b> Two grace days given.          Total number of recitation periods this semester: 12          Total number of attendance points: <math>2 \times 12 = 24</math>          Number of points you earned: <math>n</math>          Your participation grade: <math>(n/24) \times 25\%</math>, capped at 100%.</p>	25%
<p><b>Liberal Studies Quantitative Assessment (LSQA):</b>          This will be an online quiz on Canvas, and the policies are the same as for the Quizzes. It will be based on the T-Interval material and will be given after the material is taught. It will not be the final assessment.</p>	10%
<p><b>Quizzes:</b></p> <ul style="list-style-type: none"> <li>- open book, graded for accuracy</li> <li>- online on Canvas, available Mon-Tue the week after the material is taught</li> <li>- two timed attempts will be permitted for each quiz, essay-type questions will not be graded until the quiz closes</li> <li>- the grading period for the essay-type questions will be Wed-Thu, no extensions granted during this time</li> <li>- collaboration and internet sources (except the course Canvas) are not permitted</li> <li>- quiz grades will not be dropped but due dates will be extended if warranted</li> <li>- if the extended due date is missed, it may not be re-extended further</li> <li>- missed quizzes must be made up in numerical order</li> <li>- the final quiz will be made available during final exams week</li> </ul>	65%
<p><b>Total</b></p>	100%

- Please bring your computer and/or all of the printed material that you have for this class to the classroom every day.

~ Assessments that are not submitted will receive a grade of zero. When a makeup is submitted, the zero will be replaced with the earned grade.

~ Please check your grades every Saturday to make sure that your most recent assessment grades have been uploaded to Canvas. If your grades are not there, please let your TA know immediately.

~ If you believe that the grade you received on an assessment is incorrect, please bring it to your TA's attention within 48 hours after the grade has been made available to you. If no issues are raised during that 48-hour time frame, then it will be assumed that the grade is accepted and subsequent requests for a grade review may not be granted.

~ Please keep in mind the possibility of emergencies that might prevent you from submitting multiple assessments during the last couple of weeks of the semester, or the last few days of the semester, or the last day of the semester. Please work consistently during the semester and complete the assessments as we go.

~ If you request a quiz extension, please check your email every 12 hours until you receive a response saying that the extension was granted/denied.

~ An extension on a specific assessment will NOT be granted if you have prior outstanding assessments. For example, if you request an extension on Quiz 8, but you did not submit Quizzes 3 & 7, then you will be denied an extension on Quiz 8, but you may receive extensions on Quizzes 3 & 7.

~ If multiple quiz extensions are required due to exceptional circumstances, then only two extensions will be granted at a time, and the extensions will follow the ordering of the quizzes. After you submit one of the extended quizzes, you will email your TA and ask them to reopen the next one. Please note that it may take a day or two for the quiz to be reopened after you send the email, so you should send your email in a timely manner and check your email every 12 hours for a response.

~ If you have not submitted the LSQA and at least eighty percent of the Quizzes given so far by the end of Week 13 (Nov 18th), then you will not be given any extensions at all during the last two weeks of classes.

~ The last day of classes is the ultimate deadline for all quiz submissions, including quizzes where extensions were granted, but not including the final quiz.

~ After the last day of classes, there will be no make-ups, no extensions, no extra credit assignments, and in general, no opportunities for grade improvement, so please do your best during the term.

~ After the final assessment is over, the class will be absolutely and completely over. In particular, this means that all assessments will be completely over and absolutely no make-ups or extensions will be allowed.

~ Please ignore the grade totals or averages that you may see on the course website; they are not correct and unfortunately it is not possible to disable them. In this class, we only store and display individual assessment grades on the course website, we do not do grade calculations there.

~ All grades will be recorded as percentages, and these percentages (not points) will be used in your overall course grade calculation:  $(\text{Participation} * 0.25) + (\text{LSQA} * 0.1) + (\text{Quiz Average} * 0.65)$ .

~ Your letter grade will be selected from the grading scale below after rounding the overall numerical course grade UP to the next higher whole number.

A = [93, 105)%	B+ = [87, 90)%	C+ = [77, 80)%	D+ = [67, 70)%	F = [0, 60)%
A- = [90, 93)%	B = [83, 87)%	C = [73, 77)%	D = [63, 67)%	
	B- = [80, 83)%	C- = [70, 73)%	D- = [60, 63)%	

**How to aim for success in this class**

- ~ attend all of the MonWed lectures, pay attention, fill in the notes as demonstrated by the instructor, ask questions
- ~ after the lectures, study thoroughly the information and examples in the filled-in notes
- ~ do all of the try-on-your-own exercises in the notes
- ~ do any additional exercises posted with the notes
- ~ study the solutions even if you get the answers right because the solutions can provide insights to the problems
- ~ make sure you know how to use your calculator appropriately
- ~ attend all of the Friday recitations, discuss the material with your classmates and your TA, ask questions, receive help
- ~ take the Quiz the following week and utilize the second attempt if you get <100% on the first attempt, the higher of the two grades will be kept

**Final Exam Rescheduling Policy**

***You may not take the final exam before final exams week.*** Individual students who need to reschedule the final exam for a different time during final exams week should talk to me about it first to get my approval and then fill out and follow the instructions on the “Request to Reschedule a Final Examination” form at [https://artsandsciences.fsu.edu/sites/g/files/upcbnu321/files/2022-01/Request to Reschedule 01032022.pdf](https://artsandsciences.fsu.edu/sites/g/files/upcbnu321/files/2022-01/Request_to_Reschedule_01032022.pdf).

The form needs to be submitted to the College of Arts and Sciences before 5pm on the last day of classes.

If you experience a documented emergency that prevents you from observing the above deadline, contact me as soon as you are able to, and we’ll take it from there.

**We will not have a cumulative final exam, but the above policy will apply to our final quiz.**

**Receiving a grade of “Incomplete”**

A request for a grade of “Incomplete” will

- ~ not be granted if you have completed the coursework, including the assessments that cannot be dropped and excluding the drops and allowable absences.
- ~ be granted only if both of the following conditions are satisfied:
  - (1) the only assessment that you have yet to take is the final assessment, and
  - (2) your overall average excluding the final assessment is a passing grade (70% or above).

**Email & Communication**

- ~ Please turn on the course notifications on Canvas by going to Account/Notifications and selecting the *Notify immediately* option for all of the items under Course Activities.
- ~ Please check your FSU email, your Canvas Inbox, and the course announcements on Canvas every day.
- ~ If you communicate with us via email, please use your [@fsu.edu](mailto:@fsu.edu) account.
- ~ Please send assessment-related enquiries least 24 hours before the assessment is due to begin.
- ~ Always include your name and your TA’s name when you email us. If we need to know this information in order to answer your query and you have not provided it, you may not get a response.
- ~ If you email us with an enquiry that was previously addressed in the syllabus, in a class email or in a course announcement, you may not get a response.

~ You may expect a response to your email within two work days in Fall/Spring, or one work day in Summer. However, please note that the first two weeks and the last two weeks of classes, and final exams week, are usually email-heavy times for us, so we may not be able to respond to individual emails in a timely manner. If we find that many students are asking the same question, we may answer it in an email sent to the entire class or in an announcement on the course Canvas instead of responding to the individual emails.

### **Attendance, Absence and Drop/Withdrawal**

~ Drop and Withdrawal deadlines are given in the University's academic calendar at <https://registrar.fsu.edu/calendar/>.

~ First-day attendance will be taken electronically on the course website, but you will be expected to attend class in-person on the first day and all other days.

~ You are expected to adhere to all assessment deadlines.

~ Lack of future planning, or mismanagement of time and other resources, are not acceptable reasons for missing assessment deadlines.

~ Bear in mind that the opportunities presented in this class are made equally available to all students in the class and it is up to each individual to make the most of these opportunities.

~ In the interests of fairness, we will not do for one student what we cannot do for all students who are likely to request the same.

~ Please always discuss your missed assessment deadlines with us regardless of the reasons you missed the deadlines. We will do our best to work with you while maintaining fairness to the other students in the class.

~ Documentation for missed assessment deadlines, if required, will not be accepted after the last day of classes.

### **University Attendance Policy**

Excused absences include documented illness, deaths in the family and other documented crises, call to active military duty or jury duty, religious holy days, and official University activities. These absences will be accommodated in a way that does not arbitrarily penalize students who have a valid excuse. Consideration will also be given to students whose dependent children experience serious illness. Drop and Withdrawal deadlines are given in the University's academic calendar at <https://registrar.fsu.edu/calendar/>.

### **Academic Honor Policy**

The Florida State University Academic Honor Policy outlines the University's expectations for the integrity of students' academic work, the procedures for resolving alleged violations of those expectations, and the rights and responsibilities of students and faculty members throughout the process. Students are responsible for reading the Academic Honor Policy and for living up to their pledge to "...be honest and truthful and...[to] strive for personal and institutional integrity at Florida State University." (Florida State University Academic Honor Policy, found at <http://fda.fsu.edu/academic-resources/academic-integrity-and-grievances/academic-honor-policy>)

### Academic Success

Your academic success is a top priority for Florida State University. University resources to help you succeed include tutoring centers, computer labs, counseling and health services, and services for designated groups, such as veterans and students with disabilities. The following information is not exhaustive, so please check with your advisor or the Department of Student Support and Transitions to learn more.

### Confidential Campus Resources

Various centers and programs are available to assist students with navigating stressors that might impact academic success. These include the following:

Victim Advocate Program University Center A, Rm. 4100 (850) 644-7161 Available 24/7/365 Office Hours: M-F 8-5 <a href="https://dsst.fsu.edu/vap">https://dsst.fsu.edu/vap</a>	Counseling and Psychological Services Askew Student Life Center, 2nd floor 942 Learning Way (850) 644-8255 <a href="https://counseling.fsu.edu/">https://counseling.fsu.edu/</a>	University Health Services Health and Wellness Center (850) 644-6230 <a href="https://uhs.fsu.edu/">https://uhs.fsu.edu/</a>
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### Sexual Misconduct and Title IX Reporting

As an instructor, I am obliged to report all instances of sexual misconduct and other Title IX issues that I become aware of to the University's Title IX Director; I cannot hold such information confidential. If you would like to discuss your situation in confidence, you may contact the Victim Advocate Program (<https://dos.fsu.edu/vap/>), Counseling & Psychological Services (<https://counseling.fsu.edu/>), the Employee Assistance Program (<https://eap.fsu.edu/>), University Health Services (<https://uhs.fsu.edu/>), or pastoral counselors. If you would like to submit a report to the University's Title IX Director, please go to <https://report.fsu.edu/>.

### Disaster

At times of severe weather or other disasters, please check your FSU email, your text messages, the Seminole Safe App and FSU Alerts (<https://alerts.fsu.edu/>) as often as you can to keep yourself informed. In the absence of internet access, you may call 850-644-4636 for updates. Check for the latest information every day before you leave home so that you don't miss any last minute announcements. If the University closes due to a disaster, we will all be informed via the above means, and classes and office hours will be automatically cancelled even if I don't announce it. As long as the University remains open, classes will still be on. However, please practice safety first. If it will be unsafe for you to come to class due to the effects of a disaster, please do not attempt to come in. You will not be penalized, we will work with you.

You can sign up to receive alerts via SMS text messages here:

<https://emergency.fsu.edu/services/fsu-alert-emergency-notification-warning-system/fsu-alert-sms-text-messages>.

See here for other ways in which FSU delivers warnings: <https://emergency.fsu.edu/services/fsu-alert-emergency-notification-warning-system>.

**Americans with Disabilities Act**

Florida State University (FSU) values diversity and inclusion; we are committed to a climate of mutual respect and full participation. Our goal is to create learning environments that are usable, equitable, inclusive, and welcoming. FSU is committed to providing reasonable accommodations for all persons with disabilities in a manner that is consistent with academic standards of the course while empowering the student to meet integral requirements of the course.

Students with disabilities needing academic accommodation should:

- (1) register with and provide documentation to the Office of Accessibility Services; and
- (2) request a letter from the Office of Accessibility Services to be sent to the instructor indicating the need for accommodation and what type; and,
- (3) meet (in person, via phone, email, skype, zoom, etc...) with each instructor to whom a letter of accommodation was sent to review approved accommodations.

Please note that instructors are not allowed to provide classroom accommodations to a student until appropriate verification from the Office of Accessibility Services has been provided.

This syllabus and other class materials are available in alternative format upon request.

For the latest version of this statement and more information about services available to FSU students with disabilities, contact the:

Office of Accessibility Services

874 Traditions Way

108 Student Services Building

Florida State University

Tallahassee, FL 32306-4167

(850) 644-9566 (voice)

(850) 644-8504 (TDD)

[oas@fsu.edu](mailto:oas@fsu.edu)

<https://dsst.fsu.edu/oas>

Academic accommodations will be provided as soon as possible after verification is received.

Academic accommodations are not retroactive, so they will not apply to lectures/lessons and assessments that took place before verification was received.

**Classes Subject to HB233 Recording**

In this class, consistent with state law and university policy, students are permitted to make recordings of class lectures for personal use only. As noted, sharing, posting, or publishing classroom recordings may subject you to honor code violations and legal penalties associated with theft of intellectual property and violations of other state law. Moreover, students and educators have expressed concern that recording classroom activities may negatively impact the learning experience for others, especially in classes that involve questions, discussion, or participation. To protect a learning environment in which everyone feels free to experiment with ideas, we ask you refrain from recording in ways that could make others feel reluctant to ask questions, explore new ideas, or otherwise participate in class. Students must monitor their recording so that they do not include participation by other students without permission. Students with disabilities will continue to have appropriate accommodations for recordings as established by the Office of Accessibility Services.



**Health Guidance for Fall 2022**

<https://news.fsu.edu/announcements/covid-19/2022/08/12/health-guidance-for-fall-2022/>

**Syllabus Change Policy**

Except for changes that substantially affect implementation of the evaluation (grading) statement, this syllabus is a guide for the course and is subject to change with advance notice.

**FRIDAY RECITATION SECTIONS**

STA2122	0002	HCB_0209	08:00 AM	08:50 AM
STA2122	0008	HCB_0205	08:00 AM	08:50 AM
STA2122	0003	HCB_0205	09:20 AM	10:10 AM
STA2122	0009	HCB_0214	09:20 AM	10:10 AM
STA2122	0004	HCB_0205	10:40 AM	11:30 AM
STA2122	0010	HCB_0214	10:40 AM	11:30 AM
STA2122	0005	HCB_0205	12:00 PM	12:50 PM
STA2122	0011	HCB_0213	12:00 PM	12:50 PM
STA2122	0006	HCB_0317	01:20 PM	02:10 PM
STA2122	0012	HCB_0309	01:20 PM	02:10 PM
STA2122	0007	HCB_0205	03:05 PM	03:55 PM
STA2122	0013	HCB_0209	03:05 PM	03:55 PM

## TENTATIVE PACING SCHEDULE

Week	Dates	MON	WED	FRI
1	Aug 22-26	Preliminary Definitions	Summary Statistics	Recitation 1
2	Aug 29-Sep 2	Summary Statistics	Summary Statistics	Recitation 2
3	Sep 5-9	LABOR DAY, NO CLASSES	Summary Statistics	Recitation 3
4	Sep 12-16	Normal Distributions	Normal Distributions	Recitation 4
5	Sep 19-23	Central Limit Theorem	Central Limit Theorem	Recitation 5
6	Sep 26-30	Confidence Intervals	Confidence Intervals	HOMECOMING, NO RECITATIONS ALL DAY
7	Oct 3-7	Confidence Intervals	Hypothesis Tests	Recitation 6
8	Oct 10-14	Hypothesis Tests	Hypothesis Tests	Recitation 7
9	Oct 17-21	Two-sample Means	One-way Anova	Recitation 8
10	Oct 24-28	One-way Anova	Simple Linear Regression Basics	Recitation 9
11	Oct 31-Nov 4	Simple Linear Regression Basics	Simple Linear Regression Inference	Recitation 10
12	Nov 7-11	Simple Linear Regression Inference	Chi-Square Tests	VETERAN'S DAY, NO CLASSES
13	Nov 14-18	Chi-Square Tests	One-sample Proportions	Recitation 11
14	Nov 21-25	One-sample Proportions	THANKSGIVING HOLIDAY, NO CLASSES	THANKSGIVING HOLIDAY, NO CLASSES
15	Nov 28-Dec 2	Two-sample Proportions	Two-sample Proportions	Recitation 12